



SOUTHWEST GAS CORPORATION

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AZ CORP COMMISSION
DOCKET CONTROL

February 19, 2009

Docket Control Office
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007-2996

Subject: Docket Nos. E-00000J-08-0314 and G-00000C-08-0314

Southwest Gas Corporation (Southwest) herewith submits for filing an original and fifteen (15) copies of its responses to the Arizona Corporation Commission Utilities Division Staff questions issued in a letter to the docket, dated January 30, 2009.

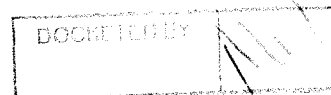
Respectfully submitted,

Debra S. Gallo

Debra S. Gallo, Director
Government & State Regulatory Affairs

Arizona Corporation Commission
DOCKETED

FEB 20 2009



BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

IN THE MATTER OF THE ARIZONA
CORPORATION COMMISSION'S
INVESTIGATION OF REGULATORY
AND RATE INCENTIVES FOR GAS
AND ELECTRIC UTILITIES

DOCKET NO. E-00000J-08-0314
G-00000C-08-0314

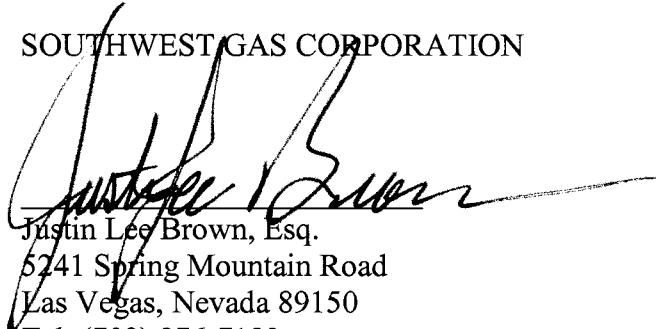
NOTICE OF FILING

NOTICE OF FILING WRITTEN COMMENTS

Southwest Gas Corporation hereby provides notice of its filing written comments in response to the Arizona Corporation Commission Staff's questions filed in the above-captioned docket. A copy of Southwest's written comments are enclosed herewith.

DATED this 19th day of February 2009.

SOUTHWEST GAS CORPORATION



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Introduction

Southwest Gas Corporation (Southwest or the Company) hereby respectfully submits its responses to the Arizona Corporation Commission's (ACC or Commission) Utilities Division Staff (Staff) questions issued to facilitate the discussion of an energy efficiency workshop to be held on March 6, 2009 at the ACC's Phoenix offices. Staff's 17 questions were contained in a letter to the proceeding entitled "Investigation of Regulatory and Rate Incentives for Gas and Electric Utilities" (Docket Nos. E-00000J-08-0314 and G-00000C-08-0314) dated January 30, 2009. Responses to Staff's questions are due in the Docket Control Center on or before February 20, 2009.

Southwest's responses to Staff's questions are framed by its experiences with energy efficiency and demand-side management programs in Arizona, and other states in which it operates, as well as its position in the state of Arizona as the largest natural gas local distribution company. Southwest's responses also rely heavily on experiences gained and positions that were taken by parties to its last two general rate cases. Southwest hopes, in a non-adversarial proceeding such as this investigatory docket, energy utilities, Staff, the Residential Utility Consumer Office, energy efficiency advocates, and others, can find common ground that advances the public interest. The public interest should be broadly defined and would be best served by addressing and including the following components in any increased energy efficiency efforts in Arizona:

- Remove all financial disincentives that inhibit utilities from promoting energy efficiency;

- Ensure the full energy cycle (and related greenhouse gas emissions reductions) is included in any analysis to determine the most efficient and cost-effective energy efficiency measures for Arizona;
- Implement financial incentives that reward successful and aggressive utility efforts in energy efficiency;
- Provide customer benefits in terms of lower total energy bills and increased comfort; and
- Determine, via a comprehensive study specific to Arizona, those energy efficiency measures that would be most effective at the least cost.

Southwest appreciates the opportunity to provide responses to the Staff's energy efficiency questions and looks forward to a robust and productive discussion as to how Arizona can best realize increased energy efficiency. Southwest's responses to the Staff questions are listed below.

Questions and Responses

1. Which energy efficiency programs and program strategies are most effective in assisting particular customer segments such as low and moderate income residential customers, households on fixed incomes, customers in existing homes (owner-occupied and rental), local governments, small business, and large businesses?

This is a broad question which requires analysis of each individual customer segment to determine what may be the most effective programs in terms of energy efficiency. Southwest has a number of demand-side management (DSM) programs which serve multiple customer segments. These include: (1) a low-income home weatherization program; (2) a residential new construction program; (3) a consumer products program; (4) a commercial

equipment program; (5) a distributed generation program; and (6) a technology information program. Southwest believes these programs are effective in serving various customer segments; however, it is unknown if they are the most effective energy efficiency programs or measures, or whether other programs or measures would be more effective. A comprehensive study of Arizona's customer base and demographics, to include existing utility energy efficiency programs, and other potential energy efficiency programs, such as that discussed in Question No. 2, would be required to determine which energy efficiency programs may be most effective in serving Arizona's customers.

The most effective energy efficiency programs should take into account the full or complete energy cycle, which measures the energy efficiency from the source to the site. These programs may result in what has been termed fuel-switching or fuel substitution. Southwest has proposed implementation of energy efficiency programs in the past to this Commission (i.e. multi-family DSM programs) that have taken the full energy cycle into account, and that have been shown, on a total energy-basis, to result in savings on customer bills and reduced energy usage. However, the Commission Staff opposed and, in turn, the Commission through its order, did not approve these types of programs because they used natural gas for an end-use application that could have used electricity. This result denies Arizona the opportunity to achieve greater energy savings, further reduce emission of greenhouse gases, and conserve precious water resources. Consequently, it is Southwest's opinion that this Commission, as have other Commissions, must consider the uncontroverted fact, that natural

gas is a significantly more efficient energy solution when used at the customer's burner-tip than when it is used to produce electricity at generating stations. Natural gas can be over 90 percent efficient as a fuel when used in certain customer end-use applications. When natural gas is burned at central generating stations to produce electricity, only 30 to 40 percent of the source fuel energy is converted to electricity actually delivered to the end-user. Additionally, for every megawatt-hour produced at the generating station, approximately 500 gallons of water are consumed. Clearly, if this Commission desires the state of Arizona to become more energy efficient, as well as wants to reduce greenhouse gases, it must consider the full energy cycle of the fuel that is consumed by or on behalf of the customer's energy needs.

2. What studies have the Arizona utility companies or other parties conducted over the past decade regarding the various energy efficiency options available in Arizona? (a) Which options produced the best in energy savings/costs? (b) Which produced the most energy efficient jobs? (c) Please provide data for, but not limited to, the following options: (i) Home Energy Audits; (ii) Solar water heater systems; (iii) Insulation/weatherization of residential properties and commercial properties; (iv) Incentives and rebates for Energy Star appliances; and (v) Landscaping to provide shading and passive solar.

Southwest has not conducted such a study. Southwest designed its DSM programs based on its knowledge and understanding of its customer base and the energy efficiency programs and measures that would be likely to provide benefits and savings to its customers. As noted in response to Question No. 1, it may be reasonable for the Commission to initiate a comprehensive energy efficiency study specific to Arizona customers that would identify the most promising and most effective energy efficiency programs/measures. If additional

energy efficiency funding becomes available to Arizona through economic stimulus legislation, it might be prudent to expend some of those funds on a comprehensive Arizona energy efficiency study.

Southwest files a semi-annual DSM report with the Commission providing data on its authorized DSM programs. The report includes a description of the activities in the various programs, the number of measures installed, the costs of each program, and energy savings, among other information. A copy of Southwest's most recent semi-annual DSM report, excluding appendices (dated September 30, 2008), is attached to this response.

Southwest conducts energy efficiency research and development activities as part of its natural gas business. Southwest is currently constructing a solar thermal hot water pilot demonstration system in Tucson that will provide domestic hot water and hydronic heating. Southwest is also constructing a solar thermal air conditioning and heating system pilot demonstration project in Tempe. Data is not yet available concerning the efficacy of those systems, but could potentially be produced after a reasonable period of operating those systems.

3. How can the energy efficiency efforts and programs be increased to provide even more benefits to customers? Specifically, how can the energy efficiency programs reach more customers and provide greater energy savings for each customer?

There are four factors that should be addressed when reviewing ways that energy efficiency efforts and programs can be increased to provide more benefits to customers.

First, the Commission should consider and adopt an analytical approach to energy efficiency programs that takes into account the full energy cycle of the measure(s) or program(s) proposed. This approach will ensure customers are getting the most economical and efficient energy measures for their money. It will also provide greater benefits to the state of Arizona in terms of increased total energy efficiency and in the reduction of greenhouse gas emissions.

Second, the Commission should review and analyze the effectiveness of multiple, independent utility energy efficiency programs and delivery methods. Multiple similar (and possibly identical) utility programs to deliver energy efficiency benefits could not, theoretically, be as effective as a single energy efficiency program (funded by all the energy utilities) delivering the same benefits. Consolidated or combined energy efficiency program(s), administered by, and funded by the energy utilities, should reduce administrative, outreach, and marketing expenses, and allow more of the energy efficiency monies of the utilities to be directed to specific energy efficiency measures. Further, customers would be less inconvenienced (and potentially, less confused), if all energy efficiency efforts or measures were installed in their household or business at one time (as in the case of a weatherization retrofit program).

Third, the comprehensive study of the potentially most effective energy efficiency measures in Arizona should be undertaken. This study would be specific to Arizona's customers, provide quantifiable data on which to base energy efficiency programs, and would provide a roadmap for both the Commission and the utilities to follow when developing and implementing energy

efficiency programs. The Commission, or an independent third-party, such as SWEEP or NRDC, with funding from the economic stimulus bill, or pro-rata collections from all the energy utilities in Arizona (with assured rate recovery from customers), should undertake and administer the study.

Fourth, funding for energy efficiency would need to be increased, particularly if the benefits of energy efficiency are to reach more of the utility customers in Arizona. As it stands today, funding levels are relatively low on a per customer basis, and thus, only a few thousand of the millions of customers will receive or obtain utility funding for energy efficiency measures. However, the Commission needs to approach the increased funding issue very carefully, in terms of impacts on customers' rates and impacts on utility resources and finances.

4. Are there additional cost-effective energy efficiency programs or enhancements of existing programs that should be implemented? What new energy efficiency programs or measures, such as direct install, could be implemented to enhance energy efficiency for utility customers?

There are likely additional and cost-effective energy efficiency measures or programs that could be implemented for the benefit of Arizona customers. Southwest believes, however, that a comprehensive study of existing and potential energy efficiency measures and programs, and specifically, how they would be effective in Arizona, should be undertaken before new or additional energy efficiency programs are implemented by Southwest or the other energy utilities.

In terms of the “direct install” program, Southwest was able to research and review three direct install programs implemented in California by the following utilities: Southern California Edison; Marin Municipal Water District; and San Francisco Water (under the auspices of the San Francisco Public Utilities Commission). The direct install programs covered high-efficiency toilets for low-income, multi-family, and business customers (Marin and San Francisco) and fluorescent lighting, refrigeration, and LED exit signs for small- and medium-sized business customers (Edison). All the programs involved an energy/water audit or examination to determine eligibility and need, with a resulting free purchase and installation of the qualifying measure(s). This type of program would likely increase the number of energy efficiency measures installed and the number of customers that benefit; however, it would also be relatively costly. The utility would need to have additional staff and resources (or contract for the same) to audit and install the measures, and the utility would be paying the full cost of the energy efficiency measure in contrast with paying a portion of the incremental cost through a rebate or incentive as is generally the case in Arizona.

5. Are there specific actions the Commission should take to support energy efficiency programs?

Yes, there are several actions the Commission could take to support energy efficiency programs. The first action the Commission should take is to identify and remove or, at a minimum, significantly mitigate, existing financial barriers or disincentives that discourage full utility support and participation in programs related to conservation and energy efficiency. This effort should involve analysis of the underlying trends in each utility sector (electric/natural gas) and

each individual utility's customer usage, identifying to the extent possible, factors driving changes in customer usage, and designing specific programs for each utility sector and each individual utility that promotes and encourages their full support of conservation and energy efficiency. Second, the Commission should undertake an in-depth review and examination of Arizona's total energy and water requirements in order to determine and promote the most efficient total resource mix for customers and the state of Arizona. This means the Commission should examine conservation and energy efficiency measures from the standpoint of the full energy cycle (from the extraction of the fuel to the energy consumed by the end-user, taking into account conversion and transmission losses) and should utilize this approach or methodology when reviewing proposed energy efficiency measures or programs. This approach will provide the most benefits to Arizona and utility customers in terms of increased energy efficiency, lower total energy bills, increased water conservation, and reduced greenhouse gas emissions. Third, the Commission should examine the use of incentives for utilities that provide them a business reason to wholeheartedly undertake and expand conservation and energy efficiency programs. Incentives could take the form of a monetary reward for accomplishing certain energy efficiency goals, or an additional return to shareholders for energy efficiency investment.

6. Are there procedural options available to the Commission to accelerate progress towards increased energy efficiency?

Yes. The Commission's opening of this proceeding and initiating a series of workshops, beginning with the March 6, 2009 energy efficiency workshop, is a

good first step in reviewing, identifying and developing action plans to remove barriers and provide incentives to utilities to undertake increased energy efficiency efforts. Southwest also believes the Commission could provide accounting orders for utilities to protect them from financial harm and authorize them to immediately increase their efforts regarding conservation and energy efficiency programs. For example, the Commission could authorize full revenue decoupling for gas utilities to record for future recovery revenue shortfalls related to conservation and energy efficiency efforts (both those voluntarily undertaken by gas utility customers, and those promoted and supported by the utility) provided such recovery does not affect the base tariff rates established in each utility's most recent general rate case. The removal or significant reduction of the financial risk and disincentive for gas utilities to aggressively promote conservation and energy efficiency is a key component of the speed at which progress will be made towards increased energy efficiency.

7. Would an annual energy efficiency standard or goal heighten the utilities' incentive to manage energy efficiency program to maximize results?

If energy efficiency standards and/or goals are established, they should, at a minimum, encompass the following five parameters. First, they should be utility-specific. Second, the standard/goal should be realistically attainable in the time period established and with the resources that will be available. Third, barriers or disincentives should be eliminated and there should be a system of incentives to encourage the utility to meet or exceed the standard/goal. Fourth, the base year from which the utility must meet the standard, should be carefully

chosen, and anomalies or unusual events in the base year should be eliminated (for example, the base year may represent a period of economic slowdown or recession). Fifth, the Commission must provide the resources and funding from customers necessary to reasonably achieve the standard/goal.

8. What energy savings goals or standards should be set to increase energy efficiency in Arizona? How should an energy efficiency standard or goal be based (for example, on load or total resources), and at what level?

As set forth above, standards and/or goals must be utility-specific and reasonably attainable. They should not be set based on a preconceived or arbitrary percentage or number. Standards/goals, if set, should be based on the total load of the utility, or put another way, on the total energy consumption of a utility's customer base. Additionally, only a utility's sales load should be considered and a utility should be exempt from reducing any transportation or wholesale loads. Standards or goals could also be set more accurately if established by class of customer. The potential for energy savings is not equal amongst customers. Certain energy efficiency or conservation programs work for one set of customers but not for another. As such, a standard or goal by customer class may be more reasonable and attainable, than one set for the utility as a whole. The standard or goal could also be banded, or contain a "dead band"; wherein, within a certain percentage, up or down, no incentive would be achieved/assessed. For example, if a utility's standard were to achieve a five percent reduction in sales load within a five year period, there would be no incentive provided if the utility was within plus/minus five percent of that standard (95% to 105%).

9. How should the results of energy efficiency programs be publicly reported so that Arizona consumers can easily assess the effectiveness of those programs?

Southwest publicly reports its DSM results periodically (semi-annually) by filing those reports in the Commission's Docket Control Office. Southwest understands other Arizona energy utilities regulated by the Commission make similar filings. Southwest believes the Commission (as the central repository of the information) would be the best source for compiling the results of the various energy utilities' energy efficiency programs into one summary publication or document that could be understood and used by Arizona customers to easily assess program effectiveness. The summary of results could be produced by the Commission and posted to its web site and released to media outlets on a periodic basis as a "report card" on how Arizona is performing.

10. What are the likely impacts on utility companies of increasing energy efficiency?

Southwest is only able to speak to the effects on its own system. Generally speaking, if increasing energy efficiency results in reduced energy use per customer, customers will benefit and enjoy bill savings. However, only the cost of natural gas itself will be a permanent savings to the customer, as Southwest's rates for distribution service (margin) will eventually increase to recover its fixed cost of service. For Southwest and other natural gas utilities, there are relatively few incremental cost savings (other than the cost of natural gas itself) associated with decreases in use per customer, and consequently, Southwest's fixed cost of service must be recovered from a reduced sales base.

Without revenue decoupling, Southwest's shareholders will pay the unrecovered fixed distribution costs between rate cases if customer energy efficiency increases. This effect increases Southwest's financial risk, results in deteriorated financial metrics, and places upward pressure on rates, which, invariably, results in more frequent general rate cases, and increased burdens on Commission and utility resources. Consequently, Southwest believes revenue decoupling for natural gas utilities is the necessary first step to reduce and ameliorate these detrimental impacts from the utility increasing energy efficiency efforts.

11. What role can or should decoupling play in efforts aimed at energy efficiency?

For energy utilities with decreasing use per customer (gas utilities), decoupling must play a central role for efforts to dramatically increase energy efficiency to be effective. As evidenced by the Commission's March 6, 2009 workshop, it is now time for Arizona to assume a leading role in conservation and energy efficiency. If Arizona wishes to move from a "middle-of-the-pack" standing to a leader in energy efficiency, the Commission must not only remove the disincentives to greater energy efficiency, it must also provide incentives to utilities to increase their efforts. Volumes have been written already in multiple general rate cases before this Commission regarding the need to remove the financial disincentive before Arizona's gas utilities can fully embrace and aggressively promote conservation and energy efficiency without incurring immediate and direct adverse financial consequences.

It is clear that decoupling can have demonstrable and beneficial impacts on energy efficiency. The State of California embraced revenue decoupling approximately 30 years ago and has enjoyed one of the best, if not the best, records of reducing growth in energy use per customer over that time period. It is doubtful if California's utility companies would have been able to successfully accomplish such successful energy conservation and efficiency without decoupling.

Furthermore, much has also been written regarding the perceived shifting of risk to customers that would result from decoupling. In fact, it is Arizona's utility customers who have the most to gain/save from successful and increased conservation and energy efficiency efforts. The cost of gas not consumed is a permanent savings for customers and society as a whole. Given all of the pressing needs for Arizona and the country to succeed in maximizing conservation and energy efficiency, and in turn, conserve natural resources, reduce greenhouse gas emissions and reduce overall costs to customers, it is unreasonable to disincent investors, while encouraging sales reductions that allow customers who conserve to enjoy substantial savings. Adoption of revenue decoupling, therefore, actually produces a proper balance of risk between customers and investors, if increased energy efficiency is the ultimate goal.

A recent survey by J.D. Power and Associates (the "2008 Gas Utility Residential Customer Satisfaction Study") indicates customers' satisfaction with natural gas utilities is increasing because of the promotion of conservation and energy efficiency strategies by the utility that help lower customers' bills. This

higher satisfaction is most pronounced in states that use decoupled rate mechanisms. The research suggests that decoupling of rates for natural gas utilities is one of the important factors of the increased satisfaction because those utilities are more active in communicating rebate programs and energy efficiency tips and information to customers.

12. In addition to decoupling, what other incentives, such as performance incentives, could be used to counter the disincentive of reduced sales that arise from energy efficiency programs?

For a gas utility with decreasing use per customer, full revenue decoupling removes virtually the entire financial disincentive to reduced sales. For gas utilities, that is why full revenue decoupling is preferable to a "lost revenues" approach. For electric utilities, that have increasing per capita consumption, a lost revenue approach may be more appropriate. There are clear distinctions between gas and electric utilities in terms of customer usage and the ability to affect customer conservation and energy efficiency. The Commission must keep this in mind as it approaches the issue of increasing energy efficiency. As noted above in the discussion of energy efficiency standards/goals in terms of banding the zone where incentives would apply, it may also be reasonable to implement a banded revenue recovery methodology for the utility's own conservation and energy efficiency programs, where the percentage of deferred revenue (under decoupling) allowed to be recovered is linked to the utility's program performance and thus, could be used to encourage greater utility efforts. Another possible incentive for the utility to increase energy efficiency could be to grant rate base treatment for its investments in conservation and energy efficiency. This could

be further enhanced by coupling the rate base treatment with an equity return adder or bonus applied to such investment. As also noted earlier, incentives could be designed to reward the utility for exceeding energy efficiency standards/goals or by achieving those standards/goals prior to any mandated deadline.

13. How should a performance incentive be structured?

Performance incentives should be structured based on each utility's unique circumstances and should be appropriate for the ultimate goal of the incentive – increased total energy efficiency. Incentives should be reasonable but large enough to modify the utility's natural business behavior. In fact, incentives appropriately structured and applied may lead to a complete change in the utility's corporate culture. For electric utilities, it is likely that incentives would need to be structured to make the utility more likely to choose a demand-side resource than a supply-side resource. This is particularly true, because supply-side resources, such as generation, are quite costly. In other words, the incentive would need to be large enough to overcome the traditional regulatory treatment for supply-side resources (rate base/rate of return). For gas utilities, where supply-side resources are relatively inexpensive (at least compared to electric utilities), incentives would need to be structured that provide the utility more income or return than it would receive under the normal regulatory treatment afforded purchased gas costs (dollar-for-dollar recovery). As noted earlier, to the extent incentives are considered, they should be reasonable, balanced, and not disproportionate.

14. How can funding mechanisms be modified to increase utilities incentive to more fully engage in energy efficiency programs?

Southwest's existing DSM (energy efficiency) program funding mechanism works adequately. However, it could be augmented by providing a greater return on the expended and deferred funds. For example, a return equal to the weighted average cost of capital. This would provide expended energy efficiency funds rate base treatment; equal to that provided to any reasonable and prudent utility investment. It could be further augmented by allowing an equity adder. This would further incent the utility to fully expend the funds it was authorized in a timely fashion, as the utility would be provided a return somewhat higher than that which it would receive on investments provided rate base treatment.

15. Is additional funding needed for energy efficiency programs and, if so, what level of funding would produce the most benefits in relation to the cost?

The proper level of funding is again, dependent on the specific energy utility, its service area, climate, and customer demographics. As noted earlier, there are likely greater opportunities for energy efficiency gains in the electric sector than there are in the gas sector. That said, it may be beneficial to explore joint electric/gas (and possibly water) utility energy efficiency and conservation programs, as this would increase the efficiency and effectiveness of the delivery of the programs/measures and provide customers (who are likely served by both utilities) more "bang for the buck". The level of funding will likely be a constantly evolving target, and will vary based on each utility's unique circumstances, the changes in available conservation and energy efficiency measures, as well as

changes in the cost of other utilities' energy resources (and the price customers pay for those resources in their rates).

16. If the Federal Economic Recovery package is adopted and includes significant funding for energy efficiency programs, how best should these monies be spent to enhance energy efficiency in Arizona?

The House/Senate compromise stimulus package recently passed in Washington, D.C., includes what appears to be several billion dollars in funding for energy efficiency and renewable energy projects. It also includes the opportunity for states to receive additional energy efficiency funding, if the regulatory authority for electric and gas utilities adopts a policy that ensures utility financial incentives are aligned with helping customers use energy more efficiently. This alignment is most easily accomplished through decoupling. Additionally, the state regulatory authority is to provide for timely cost recovery and a timely earnings opportunity for utilities associated with cost-effective measurable and verifiable efficiency savings. Southwest strongly encourages the Commission to take advantage of this opportunity to acquire additional funds for energy efficiency if the goal of the Commission is to move the state of Arizona into the top echelon of energy-efficient states in the nation.

There are likely several ways these monies could be spent to enhance energy efficiency efforts in Arizona. As noted in Southwest's earlier responses, one use of any economic stimulus funding would be for the Commission or an independent third-party, such as SWEEP or NRDC, to commission and administer a comprehensive energy efficiency study specific to the state of Arizona. The completion of the study would provide a more accurate

assessment of what is needed, in terms of energy efficiency in Arizona, and how funds could best be expended to obtain the greatest amount of benefit at the lowest cost.

As greater energy efficiency funding from the Federal government would likely be short-lived, it would be necessary to identify programs/measures where it could be immediately used to increase energy efficiency and stimulate the local Arizona economy. As such, most of the increased funding should go to existing or immediate impact programs. These would include: (a) increasing the funding level of low-income weatherization programs and the number of low-income households served; (b) augmenting existing utility funding for new home energy efficiency programs, such as Southwest's Energy Star®; (c) implementing or enhancing any commercial new building program; and (d) implementing or enhancing energy efficiency retrofit programs for residential and small commercial customers. Increased funding in these areas could be put to immediate use, would stimulate the local economy through the demand for workers to audit and install energy efficiency measures, and would significantly increase the level of energy efficiency in Arizona.

Another potential use for any increased funding would be to implement a pilot program to determine the efficacy of consolidating and/or combining multiple, independent utility energy efficiency programs into a single program. This is already done to some degree in the low-income weatherization program; wherein, the Department of Commerce Energy Department coordinates the utility funding and weatherization efforts for those eligible customers. Potential energy

efficiency program candidates would be those that use both electric and gas in the household/business (water could also be considered in the pilot to get even more benefit for every dollar expended). Those programs, in addition to low-income weatherization, would include new residential and/or commercial building construction, and weatherization or retrofit programs for existing residential and commercial building stock.

17. What specific energy efficiency programs, measures or delivery mechanisms would produce the most results from additional funding?

The answer to this question is included in the response to Question No. 16 above.

Conclusion

Southwest believes Arizona should step into the vanguard of leaders in the energy efficiency arena, and implement all necessary and cost-effective energy efficiency measures and programs reasonably available. Southwest also believes certain regulatory barriers and practices must be broken down and overcome if the state of Arizona is to assume its place in the forefront of this nation's efforts to significantly increase its energy efficiency efforts, reduce its greenhouse gas emissions, and provide stable and reasonable energy prices for the public. Southwest, with the necessary regulatory support, stands ready to assist Arizona in these efforts.



SOUTHWEST GAS CORPORATION

**SEMI-ANNUAL
DEMAND SIDE MANAGEMENT
REPORT**

September 30, 2008

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INTRODUCTION

Southwest Gas Corporation (Southwest or Company) submits its Semi-Annual Demand Side Management (DSM) Report (Report) in accordance with various approvals received from the Arizona Corporation Commission (Commission) in Docket Nos U-1551-93-272 (Decision No. 58693), U-1551-96-189 (Decision No. 59685), U-1551-96596, (Decision No. 60352), G-01551A-99-0288 (Decision No. 61853), G-1551A05-0249 (Decision No.67878) and G-01551A-04-0876 (Decision No. 68467).

DSM activities discussed in this Report include programs for ENERGY STAR® Home, Low-Income Energy Conservation, Consumer Products, Commercial Equipment, Pre-Rinse Spray Valves, Technology Information Center, Distributed Generation, and the Demand Side Management Adjuster Mechanism.

ENERGY STAR® HOME PROGRAM

The ENERGY STAR Home (ESTAR) program is a residential new construction program designed to upgrade the energy efficiency of new housing. ESTAR encourages the construction of new, energy-efficient homes that comply with guidelines established by the U.S. Environmental Protection Agency (EPA). Improvements are made in thermal shell construction and the installation of high-efficiency mechanical equipment. Homebuilders are required to participate in performance-based practices that address whole-house infiltration, duct leakage, and pressure balancing.

Southwest provides for implementation and home certification services for participating homebuilders. The program involves the recruitment of builders into the program, review of their home plans, consultation on effective construction techniques required to meet the guidelines, and inspection and testing of the homes for compliance. Homes which meet or exceed the guidelines are then certified as ESTAR.

Inspection and testing of the ESTAR Home program is done through certified Home Energy Rating System (HERS) providers, which inspect and test each home for compliance with the EPA ENERGY STAR guidelines. In the Tucson metropolitan area, Southwest serves as the HERS provider, as no other HERS providers are currently available. Outside of Tucson, several certified HERS providers are available to provide these services and Southwest provides participating builders a reimbursement of \$125 per qualifying ESTAR home to assist with the cost of inspections and testing. Payments are made as the homes are built and tested.

Details of the program from January 2008 through June 2008 are provided below.

Budget

The approved annual budget and actual program costs from January 1, 2008 through June 30, 2008 are presented in Table 1.

Table 1 ENERGY STAR Home Program Program Costs			
Description	Annual Budget	Actual Program Costs	(Over)/Under
Implementation	\$ 297,000	\$ 50,618	\$ 246,382
Communication	\$ 22,000	\$ 29,412	\$ (7,412)
Outreach	\$ 3,500	\$ 10,255	\$ (6,755)
Training & Education	\$ 13,000	\$ 7,261	\$ 5,739
Measurement & Evaluation	\$ 9,500	\$ 7,138	\$ 2,363
Administration	\$ 5,000	\$ 2,592	\$ 2,408
Total	\$ 350,000	\$ 107,275	\$ 242,725

Participation

A total of thirteen (13) Arizona builders are currently participating in the ESTAR Home program, representing thirty (30) subdivisions for a total of 3,741 homes. Table 2 below summarizes participation. Other statistics on participating homes for the first half of 2008 are presented in Appendix A.

Table 2 ENERGY STAR Home Participants January 1, 2008 - June 30, 2008	
	Total
Builders	13
Subdivisions	30
Homes Committed	3,741

Inspections and Testing

Table 3 summarizes the number of ESTAR inspections that Southwest completed during the first half of 2008. Because the program was not expanded to other areas in Arizona until late-March 2008, most of the homes newly committed to the program have not yet begun construction and consequently, there is no inspection data available for them. Construction of these homes is expected to begin during the fourth quarter of 2008.

Table 3 ENERGY STAR Home Program Inspections Completed January 1, 2008 - June 30, 2008	
Description	Inspections
Duct Blaster®	49
Insulation	66
Blower Door	50
Thermal Bypass Checklist	39
Total	204

Testing and inspection of homes continue to be valued by builder participants, providing opportunities for the highly productive day-in, day-out field training. Due to the smaller numbers of homes being built this year, the sampling protocol required for ESTAR has actually had the effect of more homes being inspected and tested. In addition, more builders are participating in enhancements such as the EPA's Indoor Air Quality and Lighting programs, as well as the federal tax credit, Green Building, or solar programs. These enhancements have also contributed to an increased number of inspections and tests required for compliance.

Partnerships

The Arizona Department of Commerce Energy Office (AEO) continues to provide on-going consultative support for ESTAR educational activities. The AEO plays an important advisory role with regard to energy-efficient building practices.

Southwest continues to maintain a close relationship with the Architectural Energy Corporation (AEC), creator of the REM/Rate software that Southwest uses to model energy performance from builders' plans. AEC is committed to on-going improvement and updating of the software to track developments in energy codes and policies.

Residential Energy Services Network (RESNET) is the overseer of the HERS certification system, which is the foundation for ESTAR. As such, Southwest participates in various RESNET activities and maintains compliance with its accreditation requirements.

The Company also remains allied with Pima County for its Green Building program and is participating in Maricopa County's development of a similar program.

Training and Education

Southwest continues to look for opportunities to partner with other Arizona utilities to co-sponsor education on high-performance homes. Along with these other utilities, the Company plans to co-sponsor two sessions of education on high-performance homes for homebuilders and their sales staffs in August 2008. The partnership with Arizona Public Service (APS), Salt River Project (SRP), and AEO will offer *Selling High Performance Homes* conducted by the Energy & Environmental Building Association (EEBA), a well-respected educational organization. Please see Appendix A for a sample of the invitation.

Southwest will also co-sponsor the 2008 EEBA conference, to be held October 22-24, 2008 in Phoenix. The Company will underwrite the Green Building educational track and have a display booth at the conference Expo, to be staffed by Southwest Service Planning employees from both Tucson and Phoenix. The booth will feature "The Natural Choice...ENERGY STAR Homes" as a backdrop and ESTAR brochures will be used as handouts. Part of the sponsorship will include a large number of scholarships used to encourage attendance on the part of ESTAR program participants. Information about the conference can also be found in Appendix A.

Southwest program representatives responsible for program implementation and quality control attended the RESNET conference in February 2008. The educational sessions count toward rater training and recertification requirements. Even more importantly, attendance allows Southwest to be advised of trends in building science, solutions to construction challenges, and knowledge of what is on the horizon for ESTAR.

Southwest program representatives also successfully passed the RESNET examination necessary to continue certifying homes for ESTAR and one team member has also achieved certification as an accredited LEED (Leadership in Energy Efficient Design) professional. This representative can now certify homes for Green Building compliance on behalf of Southwest, in addition to ESTAR.

Program Communications

Program communications continued in 2008 with a newly-revised consumer-focused ad in the New Homes Guide of *Tucson Lifestyle* magazine. It may also be seen in Appendix A. The ads serve to build and maintain consumer knowledge and interest in energy-efficient homes, and drive them toward participating builders. This, in turn, helps motivate builders to continue offering consumers high performance homes.

In addition, Southwest distributed an ESTAR bill insert carrying the message of energy-efficient housing to all of its Arizona residential customers in May 2008. The bill insert can also be found in Appendix A.

Southwest also produced informational flyers as handouts for both builders and consumers. The former are used to help recruit program participants, and the latter are used to educate prospective homebuyers. Both categories of flyers are found in Appendix A.

The program is also promoted via Southwest's website, www.swgas.com, under the energy efficiency programs section. A copy of the web page is included in Appendix A.

Program Update

During the life of Southwest's residential new construction program, the homebuilding industry has gradually accepted ever-increasing levels of energy performance, which is transforming the new housing market in Arizona. Responding to the marketplace, local building code guidelines have kept pace with the transformation to higher energy performance. Even those builders who have not elected to participate in the current ESTAR program are still constructing homes according to guidelines of the 2006 International Energy Conservation Code (IECC), which is equivalent to earlier ESTAR guidelines.

Southwest continuously monitors factors that impact the program and adjusts the program accordingly. The housing slowdown has impacted builders throughout Arizona, streamlining their operations and has led to a focus on selling their inventories of unsold homes. However, it is interesting to note that in spite of poor market conditions, new builder participants joined the program, and are committing new projects. Participants have, by and large, also embraced enhancements to the ESTAR program, such as the local Green Building program, or the federal tax credit program, and one is pursuing a solar program. These builders are repositioning themselves to make energy performance a priority, which may increase their competitive advantage when the housing market eventually recovers.

Southwest has focused on expanding the program throughout Arizona. As some form of high performance home programs have been provided by other utilities, Southwest found an established infrastructure of HERS providers exists in the Phoenix metropolitan area. These HERS providers charge the builders directly for their services. For this reason, Southwest determined that it would be counterproductive to interfere with this existing infrastructure and has worked cooperatively with the three HERS provider companies to implement the program in this market. Southwest provides a reimbursement of \$125 per qualifying tested and built natural gas home in compliance with the ESTAR requirements.

Participation to-date has exceeded expectations with the commitment of 2,077 homes by five homebuilders. Construction, and therefore inspections and testing, of these homes is not expected to begin until later in 2008.

All builders in Arizona with whom Southwest has met, agree that energy efficiency remains in the forefront of their future plans. At this time, however, many of them decline to participate in ESTAR, being reluctant to do anything that could increase the cost of their homes. However, there are at least three major builders in the Phoenix area who are reviewing and revising their current home plans with the ultimate purpose of participating in ESTAR. One builder offers Green Building options but intends to make them standard when market conditions improve.

Future Developments

The major changes which can be anticipated for energy-efficient new construction in the near future are enhancements with ESTAR as their foundation. The EPA sponsors Indoor Air Quality and Lighting

packages, and continues to investigate merging ESTAR with Green Building standards. Another related consideration which could affect the guidelines will be greenhouse gas emissions, as EPA may revise future ESTAR guidelines to reduce the carbon footprint of new homes.

Meanwhile, the U.S. Department of Energy has introduced its own program called "Builders Challenge," which represents efficiency at least 15 percent better than ESTAR. This program uses the same HERS rating scale, infrastructure and field verification services as ESTAR. Southwest anticipates that some builders will achieve this level in a few of their projects. In addition, solar technology is playing an ever-increasing role, with one ESTAR participant offering it in a project. Consequently, Southwest will continue to monitor further changes in the industry and the ESTAR guidelines.

Southwest believes that given enough time and improvement in the housing market, more builders will gradually move toward ESTAR during the next two years throughout Southwest's Arizona service territory. As an example, interest in ESTAR has rekindled in Yuma, and several builders are seriously considering participating in the program. One builder has attended a training session conducted by a HERS provider.

As before, Southwest remains committed to energy-efficient new construction. In light of local and national policies, Southwest will continue to utilize the program to assure the most benefit for its Arizona customers.

LOW-INCOME ENERGY CONSERVATION PROGRAM

The Low-Income Energy Conservation (LIEC) program provides qualified limited-income customers with money-saving improvements that reduce energy use in their homes through home weatherization measures. It also offers emergency bill assistance to customers in need. The program is available to customers whose annual income is less than 150 percent of the federal poverty income guidelines as established annually by the U.S. Department of Health and Human Services. The program year runs from July 1 through June 30 and both homeowners and renters are eligible.

The LIEC weatherization program originated in 1998 and is administered by the Arizona Department of Commerce Energy Office (AEO) in conjunction with the Department of Energy's statewide Weatherization Assistance Program (WAP) in Arizona. The AEO sub-contracts with local community agencies to install the home weatherization measures.

In addition to weatherization, bill assistance funding is available for low-income customers to use in emergency situations to pay all or a portion of their natural gas bill. The Arizona Community Action Association (ACAA), the umbrella organization for the community action agencies throughout Arizona, administers Southwest's bill assistance funds. Although Southwest expects the entire bill assistance budget to be spent in full each year, any unspent balance is required to be allocated to the general LIEC program for weatherization, per Decision Nos. 69405 and 68487.

In April 2007, the ACC issued Decision No. 69405 granting Southwest final approval to: (1) continue the LIEC program beyond June 30, 2007; (2) increase annual weatherization funding from \$350,000 to \$450,000; and (3) offer emergency bill assistance totaling \$50,000 annually. Decision No. 68487, which was issued in Southwest's general rate case in February 2006, initially approved the increased funding for the LIEC program and permitted a new bill assistance component. Recovery of the additional funding was approved in Southwest's 2006 DSM Adjuster Mechanism filing (Decision No. 68649) and 2007 DSM Adjuster mechanism (Decision No. 69375) and began being collected in May 2006. The bill assistance component was implemented during the 2006-2007 LIEC program year.

Program Activity

During the 2007-2008 program year (July 1, 2007 through June 30, 2008), 230 households were served under the weatherization program, with expenditures totaling \$437,555. These funds were spent in four major categories: (1) duct repair; (2) infiltration control; (3) attic insulation; and (4) replacement of natural gas furnaces, which were not operational or posed a health hazard. Estimated annual energy savings for households weatherized during the program year are presented in Appendix B.

The AEO subcontracted with nine agencies to complete the weatherization services. These included: Community Action Human Resource Agency (covering Pinal County); Gila County; Maricopa County (excluding City of Phoenix and City of Mesa); City of Mesa; Pima County; City of Phoenix; Southeastern Arizona Human Resource Council (covering Graham, Greenlee, Cochise, and Santa Cruz Counties); Tucson Urban League (covering cities of Tucson and South Tucson); and Western Arizona Council of Governments (covering Yuma, La Paz, and Mohave counties). Beginning in PY 2008-2009, Mesa Community Action Network (MesaCAN) will replace the City of Mesa as the subcontracted agency for the weatherization services for the City of Mesa.

The AEO also continued its efforts to ensure the cost-effectiveness of the weatherization program. Every job submitted was carefully reviewed for accuracy of the work completed and the funding sources being

charged. Because each agency has several funding sources with different guidelines, such as Southwest, APS, Tucson Electric Power (TEP), Low-Income Home Energy Assistance Program (LIHEAP), Department of Energy (DOE) etc., determining the appropriate source for each section of a job can be complicated. The AEO and Southwest continue to work closely with the agencies to find the best fit for all parties involved.

The ACAA continued to partner with community-based agencies to distribute bill assistance funds during the second year of the program. These nine agencies include: The City of Phoenix Human Services Department; Maricopa County, Human Services Department; Southeastern Arizona Community Action Program (SEACAP); Western Arizona Council of Governments (WACOG); Community Action Human Resources Agency (CAHRA); Gila County Division of Health and Human Services; Tucson Urban League (TUL); Pima County Human Services; and A New Leaf/Mesa Community Action Network (MesaCAN). Situated throughout Southwest's service territory, these agencies provide easy access to families in need. Many of these agencies subcontract with multiple community agencies in their service area to assist the greatest number of clients. The agencies are adept at managing a variety of assistance programs and most offer an array of services, including food, shelter, rent and mortgage assistance, clothing, job training, healthcare and other vital programs for those in need.

The bill assistance program assists households who have experienced a sudden loss of income, utility disconnection, unexpected expenses resulting in an inability to pay, or health risks associated with the non-use of gas appliances. To qualify for the program, the household must be income-qualified, have not received Southwest bill assistance during the previous 12 months, and be facing a hardship, as described above. Bill assistance funds are available year-round and a maximum funding amount of \$400 may be provided to a household annually.

Each agency was allocated \$5,000 for bill assistance fund distribution during the program year. Southwest and the ACAA closely monitored the funds to ensure they were accounted for and spent appropriately. A total of 261 households and 898 individuals were assisted during the 2007-2008 program year. Table 4 shows the number of households served by agency.

TABLE 4 Low-Income Energy Conservation Bill Assistance Program Households Served by Agency 2007-2008 Program Year July 1, 2007 – June 30, 2008	
Agencies	Households Served
WACOG	49
A New Leaf	24
Gila County	27
Maricopa County	29
TUL	20
SEACAP	18
City of Phoenix	40
Pima County	29
CAHRA	25
Total	261

The impact of the bill assistance services goes well beyond the families who receive aid through Southwest's program. Southwest's annual bill assistance funds are combined with other statewide low-income utility programs; and therefore, allow Arizona greater leveraging strength for the federal LIHEAP funding. Beyond the LIHEAP leveraging, the funding for Southwest's bill assistance program was the first deposit made into the ACAA's new statewide energy assistance program, called Home Energy Assistance Fund. Through a contract with the Arizona Department of Economic Security (DES), DES provided start-up matching funds for the statewide program. Southwest's \$50,000 funding was used to leverage \$600,000 in state funds to launch the Home Energy Assistance Fund.

Program Promotion and Outreach

Southwest combines the promotion and outreach activities for both the LIEC and Low-Income Residential Assistance (LIRA) programs. The LIRA program provides discounted rates for natural gas service to income-qualified customers from November through April and year round on the service establishment charge. Southwest provides bill inserts in English and Spanish, provides program information on its website, meets annually with community action agencies, and attends a variety of community events. In addition, an annual supply of LIRA applications, which include LIEC program information, is sent to approximately 150 community agencies statewide. Appendix B includes copies of the LIRA application and informational bill insert. The bill insert was sent to Southwest's residential customers in February 2008. The LIRA application, which includes the updated income guidelines effective as of July 1, is scheduled for insertion in August 2008 customer bills.

Program Costs

The annual program runs on a fiscal year from July through June, as do the other federally-funded programs. Table 5 shows the financial details for the entire 2007-2008 program year, as recorded from the AEO and ACAA's invoices. These program year costs typically do not match the costs reported in Southwest's general ledger system in the same quarter, due to timing differences. Lag times exist from the time when weatherization work is completed, bill assistance is granted, invoices are received, and invoices are paid/recorded.

TABLE 5
Low-Income Energy Conservation Program
2007-2008 Program Year Costs

Description	Annual Budget ¹	Actual Program Costs	(Over)/Under
Weatherization/Health/Safety Components of LIEC Program			
Implementation			
Weatherization	\$ 200,500	\$ 268,540	\$ (68,040)
Health & Safety ²	93,000	26,246	66,754
Special Project	60,000	60,000	-
Training and Monitoring Costs	20,000	20,000	-
Subtotal	\$ 373,500	\$ 374,786	\$ (1,286)
Program Support			
Administration-Arizona Energy Office	\$ 22,500	\$ 22,500	\$ -
Community Action Agencies	45,000	31,868	13,132
Information/Outreach - Southwest	9,000	8,401	599
Subtotal	\$ 76,500	\$ 62,769	\$ 13,731
Total	\$ 450,000	\$ 437,555	\$ 12,445
Emergency Bill Assistance Component of LIEC Program ³			
Implementation			
Emergency Bill Assistance	\$ 45,000	\$ 45,000	\$ -
Program Support			
Administration-ACAA	\$ 5,000	\$ 5,000	\$ -
Subtotal	\$ 50,000	\$ 50,000	\$ -
Total	\$ 500,000	\$ 487,555	\$ 12,445

¹ Recovery of additional funding was approved in Southwest's 2006 and 2007 DSM Adjuster Mechanism filing (Decision No. 68649 and 69375).

² Agencies are permitted to spend up to 25 percent of their annual program budgets on health and safety, when applicable. When these funds are not needed, agencies apply the remaining health and safety budget towards weatherization activities.

³ In July 2007, Southwest advanced the ACAA funding for the total program year.

Special Projects for Weatherization

In order to increase the use and effectiveness of program funds, Southwest has allocated a portion (up to \$60,000 annually) of the LIEC weatherization funds for cost-effective special projects. The LIEC Special Projects category is designed to make funds available for large, multi-family projects. All projects must follow established program guidelines. The higher-than-normal savings from these projects help offset the less energy-efficient health and safety measures included in the program and assist in keeping the LIEC program cost-effective overall.

Distribution of these funds is on a competitive basis, using the following criteria:

1. Cost-effectiveness of the projects;
2. Partnerships with additional entities; and
3. Agency production to date.

A committee composed of housing professionals from the AEO and Southwest carefully review the submitted applications and determine which projects are funded each program year.

The special project for the 2007-2008 program year was awarded to Maricopa County and is a partnership between the AEO, Maricopa County Human Services Department, Maricopa County Housing Authority, Foundation for Senior Living, APS and Southwest. The project weatherized 46 units at the Maricopa County Housing Authority complex, Norton Circle, located in Avondale. The apartment complex was constructed in 1973 and consists of 25 single story buildings made of block construction, with single pane aluminum frame windows and uneven R-11 cellulose in the attics. Each unit has evaporative coolers located on the roof and forced air furnaces located in interior closets. Currently, the evaporative coolers and the furnaces share a duct system. There is significant duct leakage present, as observed during the site inspection and based on blower door analysis.

The Maricopa County Housing Authority upgraded the Norton Circle complex to utilize gas package heating and cooling equipment. In addition, some of the water heaters will require changing out because of combustion appliance zone issues. The new units were sealed combustion units. Maricopa County Human Services Department installed all new sealed/insulated duct systems, room pressure relief systems, R-30 blown cellulose in the attic and completed all diagnostics testing under the weatherization assistance program guidelines. The new sealed duct system resulted in an average per apartment of 400 CFM reduction in duct leakage.

The kick-off event for the Norton Circle project was held on October 25, 2007. Many public officials from the community were in attendance.

In April 2008, Southwest sent a request for proposal to the weatherization agencies for the 2008-2009 program year. Submittals are due in mid-July, which will allow Southwest to award the funding early in the new program year. This will give the awarded agency more time to complete the project and budget accordingly.

Training and Education for Weatherization

The AEO continued to enhance the training provided to both field and administrative personnel of the agencies conducting the statewide program. Southwest believes well-trained and experienced personnel are essential to a successful program.

Southwest Building Science Training Center

The Southwest Building Science Training Center (Center), operated by the Foundation for Senior Living Home Improvement (FSL) and funded through the AEO and local utilities, provides Arizona low-income weatherization technicians and residential building trades with the knowledge and skills needed to successfully perform diagnostics and repairs on Arizona's housing stock. Southwest supports this training center and allocates its entire training budget (\$20,000) towards it.

The Center, in partnership with the Building Performance Institute, Inc. (BPI), provides nationally recognized building science certifications to Arizona's weatherization agencies. Representatives from each agency are participating in the certification process. To date, eight of the agencies have BPI certified technicians on staff.

Peer-to-Peer Training

The LIEC program continued to coordinate with Arizona's WAP Peer-to-Peer training courses. These courses utilize the agencies that have the experience and skills needed to successfully implement the weatherization program. This knowledge is shared with other agencies throughout the state. The training consists of one day of classroom training and two or three days of field training. The crews work and learn with other crew members. The Peer-to-Peer technical training includes the following topics:

Pressure Diagnostic: This section of the course provides classroom and field training on testing and repair of homes with air leakage and/or room pressure problems. The training includes the use of blower doors, manometers, smoke generators, and duct air-tightness testing.

Health and Safety: This portion of the course provides classroom and field training on the testing and repair of possible safety problems.

Applied Building Science: This section of the course covers current building science theory and practical experience focused on building design, construction techniques, materials, and HVAC equipment. There is also a follow-up investigation to determine what effects these measures have on building occupants.

REM/Design Training

Training was also provided to the agencies on the use of the REM/Design software. This training instructs the attendees on the use of software for estimating annual heating, cooling, and water heating use, the potential savings of retrofit measures, and the cost-effectiveness of retrofit measures.

Peer-to-Peer Fiscal and Technical Procedures

The Arizona WAP has formed peer-to-peer working groups that allow the fiscal and technical staff from the agencies and the AEO to meet and discuss issues that arise in the program. Agencies are able to share solutions to common problems and other information.

Improvements to the Statewide Weatherization Assistance Program

The AEO implemented the procedures listed below to ensure that the statewide weatherization program is providing Southwest and other funding sources with a cost-effective program, while also maintaining or improving health and safety.

Agency Personnel Performance Reviews

A review and monitoring process to evaluate the competency of agency personnel performing the various requirements of the weatherization program was developed for the statewide weatherization assistance program. Based on this process, additional one-on-one training and technical assistance is provided on an as-needed basis.

Inspections

The Arizona WAP has implemented a monitoring program that focuses on determining areas that need improvement and utilizes the monitoring process to implement needed changes. The areas covered include auditing, diagnostics, testing and measures completed. This process begins with the review of

the technical reports for 100 percent of the auditing, diagnostics, testing and work completed each month. These reports can highlight instances where opportunities were missed or program requirements were not followed. When there are concerns with some element of the report, a site visit is conducted to address the concerns. At the job site, the diagnostic, testing and work are reviewed to determine if any improvements can be made. Based on the site visit results, follow-up training and technical assistance is provided to the local agency. For agencies where the technical reports do not show concerns, the site visit consists of monitoring a number of randomly selected homes and reviewing the diagnostics, testing and work completed. These efforts, combined with the training and competence programs, have a goal of ensuring that the program is providing the clients with a high return on Southwest's investment, while maintaining or improving the customers' health and safety.

Utility Bill Analysis

The AEO conducted an analysis of 59 homes weatherized from July 2005 through June 2006, utilizing APS and Southwest Gas utility usage data.

Savings to Investment Ratios (SIR) for total investment from all funding spent (diagnostics, energy measures and health and safety measures) and for energy-related measures only (diagnostics and energy measures) are provided below.

Assumptions

Present value of the energy efficient investment was based on 15 years measure life, discount rate of 3 percent and a utility cost escalation rate of 3 percent. On evaporative cooling conversions to air conditioning only, present value included water savings of \$100 per year.

Results Summary

The combined SIR of all jobs reviewed for funds spent on diagnostics, energy measures and health and safety measures was 1.06.

The combined SIR of all jobs reviewed for funds spent on energy measures and diagnostics was 1.27.

The average savings per home reviewed:

- 3,000 kWh
- 85 therms (in homes with natural gas).

Special Project Analysis

The AEO also analyzed the energy savings of a previous special project completed by the City of Phoenix for the Paradise Shadows Multi-Unit Project, a HUD-subsidized family complex with 67 units, which was funded during the 2005–2006 program year. A review of the impact on total utility cost (electric, gas and water) of converting evaporative cooling to air conditioning (AC) was completed. This analysis was not designed to reflect the cost-effectiveness of evaporative cooling to AC, but to provide feedback on the potential impact on utility cost to the customers when a systems approach is used. This project was not included in the SIR analysis.

The complex owner funded the conversion of these units from evaporative cooling to AC (10 SEER). The cost-effectiveness of the weatherization work was based on the projected utility cost of the units

after conversion to AC utilizing REM/Design and diagnostic results performed on the unit after the AC conversion.

The utility analysis review was designed to look at the impact of the utility cost to the renter, not the cost-effectiveness of the conversion. The data presented is an average of utility data from 19 units, where complete usage data was available.

- Average increase in electric usage of 2750 KWH (\$250)
- Average decrease in natural gas of 100 therms (\$125)
- Water savings assumed to be \$100 per year.

The overall utility cost, pre- and post- conversion, were basically unchanged. If the property owner (not funded by WAP) would have utilized 13 SEER (as required by WAP), the electric usage would have only increased by approximately 2,000 KWH, providing a over-all net savings for the conversion.

Although these findings do not support the conversion of evaporative cooling to AC for energy efficiency alone (WAP only funding), it does support the conversion where comfort and maintenance are an issue and where other, non-weatherization funding, can be utilized to supplement the new AC equipment.

CONSUMER PRODUCTS PROGRAM

On September 27, 2007, in Decision No. 69916, the Commission approved the Consumer Products program as a one-year pilot program. The goal of this program is to increase the awareness and purchases of more efficient natural gas equipment, with the first approved measure being residential water heaters. Southwest offers a rebate of \$75 to consumers for the purchase of high-efficiency water heaters with an Energy Factor (EF) of 0.62 or higher.

Budget

The approved annual budget and actual program costs from January 1, 2008 through June 30, 2008 are shown below in Table 6.

TABLE 6 Consumer Products Program Program Costs			
Description	Annual Budget	Actual Program Costs	(Over)/Under
Implementation	\$ 25,000	\$ 4,000	\$ 21,000
Communication	263,000	40,080	222,920
Incentives/Rebates	482,000	25,000	457,000
Administration	5,000	632	4,368
Total	\$ 775,000	\$ 69,712	\$ 705,288

Program Participation

Southwest has encountered several challenges in implementation of this program, due primarily to customers purchasing non-qualifying water heaters with Energy Factors below that required by the program (0.62). Southwest has taken several steps to remedy this situation, including increased communication with retailers and plumbers to ensure the proper high-efficiency equipment is available, follow-up letters and fax messages sent to retailers and plumbers, and direct communication with several retailers. Additionally, laminated signs were produced for installation at those retailers where the majority of the non-qualifying water heaters were sold.

Program participation is detailed below in Table 7.

TABLE 7 Consumer Products Program Program Participation January 1, 2008 – June 30, 2008		
Rebate Status	Customer Count	Rebates
Pending	55	\$ 4,125
Installed	94	7,050
Totals	149	\$ 11,175

Installed measures are detailed below in Table 7.

TABLE 8 Consumer Products Program Measures Installed January 1, 2008 – June 30, 2008					
Year	Month	Quantity	Equipment Description	Rebates	Annual Therm Savings
2008	April	17	Water Heater	\$ 1,275	476.0
2008	May	25	Water Heater	1,875	700.0
2008	June	52	Water Heater	3,900	1,456.0
Totals		94		\$ 7,050	2,632.0

Program Update

During the early months of 2008, Southwest developed the infrastructure for the program and began implementation on March 1, 2008. The Electric and Gas Industries Association (EGIA) was selected to process the program rebates. Southwest focused primarily on customer-driven participation, sending program information to over 117,000 customers in homes 10-15 years old rather than by point-of-purchase information during the first few months of the program. However, Southwest did send an introductory letter to retailers and plumbers on its referral program to inform them about the program and request they ensure sufficient availability of the higher efficiency water heaters required. They also were given the options of requesting a program starter kit containing rebate applications, and an in-person visit from a program field services representative. Samples of the brochure and letter are included in Appendix C.

To maintain communication with plumbers and retailers, Southwest sent the first of what is intended to be an ongoing series of faxed messages reminding them about the program and the need to ensure compliance with the program guidelines. Also, due to continuing concerns about qualifying product availability at a large retailer where many water heaters are purchased, laminated signs were produced for installation at these stores. Samples can be found in Appendix C.

The program is also promoted via Southwest's website, www.swgas.com, under the energy efficiency programs section. A copy of the web page is included in Appendix C.

The updated rebate form can also be seen in Appendix C. It should be noted that it contains a survey question designed to assess the level of free ridership, in compliance with the Commission's decision. Table 9 below shows the responses to this question indicating 67 percent answered they would purchase a high efficiency water heater.

TABLE 9 Consumer Products Program Follow-Up Survey Results January 1, 2008 – June 30, 2008			
Question	Yes	No	No answer
Would you have purchased and installed this high-efficiency water heater if Southwest Gas didn't offer a rebate?	63	28	3

Due to the initial implementation challenges encountered, the ending date for pilot program year participation was extended through November 30, 2008 and new rebate applications were printed to reflect this change. Southwest had originally selected the ending date of August 31, 2008.

Research continues on the viability of other measures for inclusion in the program, and on January 2, 2009, Southwest will submit a filing to the Commission for continuation of the program and may propose additional cost-effective measures at that time. To avoid customer dissatisfaction and disruption of the program after the challenges of the start-up phase, it is Southwest's expectation that the pilot program will continue until the Commission renders a decision on the new filing in 2009.

COMMERCIAL EQUIPMENT PROGRAM

The Commercial Equipment Program was approved by the Commission on August 28, 2007, in Decision No. 69880. This program encourages the replacement of inefficient water heaters, griddles, and steamers with high-efficiency models for Southwest's commercial food service customers, which include restaurants, schools, and hospitals. Because commercial appliances consume a large amount of energy, the opportunities for energy savings are high.

Budget

The annual approved budget and actual program costs from January 1, 2008 through June 30, 2008 are shown below in Table 10.

TABLE 10 Commercial Equipment Program Program Costs			
Description	Annual Budget	Actual Program Costs	(Over)/Under
Implementation	\$ 50,000	\$ -	\$ 50,000
Communication	30,500	1,080	29,420
Outreach	30,000	-	30,000
Training/Education	110,000	-	110,000
Incentives/Rebates ¹	597,000	26,425	570,575
Administration	12,000	11,672	328
Total	\$ 829,500	\$ 39,177	\$ 790,323

¹ Southwest advanced Electric and Gas Industries Association (EGIA) \$25,000 in January 2008, for disbursement of rebate payments to customers.

Program Participation

Southwest began developing the necessary infrastructure for program implementation in early-2008 and launched the program on July 1, 2008; therefore, there were no program participants during the first half of 2008.

Program Update

EGIA was selected as the program rebate contractor. Initial outreach consisted of the direct mailing of a program brochure to approximately 8,500 of Southwest's commercial customers. This group of customers included restaurants, churches, laundries, health clubs, and beauty salons, among others.

Other outreach includes promotion of the program to the American Culinary Federation Chef's Association of Southern Arizona, an "advertorial" scheduled for the September issue of *Arizona Restaurateur* magazine, and a web page in an online expo, www.arizonarestaurantexpo.com. The program is also promoted via Southwest's website, www.swgas.com, under the energy efficiency programs section. Copies of the web pages are included in Appendix D.

On April 25, 2008, Southwest conducted an introductory meeting for commercial equipment distributors and manufacturers' representatives. About 40 attendees learned of the program and were encouraged to

offer it to their customers; they are the external “sales force” for this program. They have since been sent a supply of the rebate applications, as well as the program brochure. Close communication will be maintained with commercial equipment distributors, and representatives and equipment manufacturers were also sent program brochures.

Southwest plans to send a letter in July 2008 to institutional customers advising of the program. The letter will be designed to be faxed back to Southwest indicating the customer’s interest and desired preference for follow-up from the Company. Southwest representatives will follow-up with these interested customers.

Future Developments

Southwest plans to evaluate the program carefully during 2008 and investigate potential enhancements for 2009 based on customer feedback. Southwest will continue to research other types of equipment that may be applicable for future rebates. Program participation is expected to increase as the economy improves.

PRE-RINSE SPRAY VALVE PROGRAM

On June 28, 2007, in Decision No. 69666, the Commission approved the Pre-rinse Spray Valve component of the Commercial Equipment Program. Pre-rinse spray valves are used in commercial food service establishments to rinse dishes prior to placing them in a dishwasher. The Arizona Department of Water Resources (ADWR) has a RinseSmart program in conjunction with the U.S. Bureau of Reclamation to provide high-efficiency spray valves free of charge to participants. Southwest has partnered with ADWR to fund the installation of approximately 5,000 additional spray valves per year for food-service customers such as restaurants, schools, and hospitals.

Budget

The approved annual budget and actual program costs from January 1, 2008 through June 30, 2008 are shown below in Table 11.

Table 11 Commercial Equipment Program - Pre-Rinse Spray Valves Program Costs			
Description	Annual Budget	Actual Program Costs	(Over)/Under
Implementation ¹	\$ 142,000	\$ -	\$ 142,000
Communication	25,000	-	25,000
Administration	3,500	-	3,500
Total	\$ 170,500	\$ -	\$ 170,500

¹ Funds were advanced to ADWR in December 2007 to provide installations for 2008. Future payments will be issued once the initial funds are utilized.

ADWR has currently spent \$11,850 of the \$150,000 advance from December 2007. 500 spray valves were purchased in May 2008. Southwest is also credited for recycling old valves that are removed during installations. This has allowed \$30 to be added back into the program funds.

Southwest is working closely with ADWR to spend the remainder of the advanced funds from 2007. Customer lists are being developed to assist in reaching more of Southwest's commercial customers. This should greatly increase the number of valve installations and dollars spent for 2008.

Program Update

ADWR is currently performing installations for the Tucson Water Authority and a number of municipalities and state agencies in the greater Phoenix area (Fountain Hills, Surprise, Scottsdale, Arizona Department of Administration, etc.). ADWR expects to expand into the City of Goodyear in September 2008.

ADWR subcontracts with SBW, a consulting firm experienced in the installation of pre-rinse spray valves, to assist with program implementation in Arizona. Together, ADWR and SBW verify pre- and post-flow retrofit rates of spray valves, as well as collect water temperature readings.

The Commercial Equipment program brochure which was direct-mailed to approximately 8,500 commercial customers in Arizona also contains information about the free pre-rinse spray valves.

Southwest gathers the requests for spray valves resulting from the mailer and forwards them to ADWR. All other Commercial program communications also contain information about the spray valves program, including a web page in an online expo, www.arizonarestaurantexpo.com. The program is also promoted via Southwest's website, www.swgas.com, under the energy efficiency programs section. Samples can be found under the Commercial Equipment Program section in Appendix D, along with the program application.

The program is also promoted at meetings of the American Culinary Federation Chef's Association of Southern Arizona, and will also be included in an "advertorial" scheduled for the September issue of *Arizona Restaurateur* magazine.

Southwest plans to send a letter in July 2008 to institutional customers advising of the program. The letter will be designed to be faxed back to Southwest indicating the customer's interest and desired preference for follow-up from the Company. Southwest representatives will follow-up with these interested customers.

Program Results

SBW is in the process of creating a database to track installation data for reporting purposes. Customer information will be available, along with the number of valves installed at each location.

ADWR has currently installed 74 valves under Southwest's program. The energy savings for these installations are shown in Table 12 below.

Table 12 Commercial Equipment Program - Pre-Rinse Spray Valve Measures Installed January 1, 2008 - June 30, 2008				
Measure Type	Installed	Annual Savings		
		Water (gallons)	Gas (therms)	Electric (kWh)
Spray Valve	74	2,256,408.0	24,790.0	405,816.0

Savings are based on replacing a 3 gallon per minute (gpm) pre-rinse spray valve with a 1.6 gpm spray valve used a total of one hour per day, 363 days of the year.

TECHNOLOGY INFORMATION CENTER PROGRAM

The Commission approved Southwest's Technology Information Center (TIC) Program as a pilot program on June 28, 2007, in Decision No. 69667. This program is designed primarily for Southwest's large commercial, industrial and transportation-eligible customers, a widely-varying group of large-use customers. Participants receive a monthly electronic newsletter containing technical information on energy-saving equipment and processes that will enable them to make informed energy and environmental decisions. Features include the "Ask an Expert" hotline, an electronic research library, and a carbon footprint calculator, among others. Using this tool, the Key Account Management industrial gas engineers and the DSM department will track customer interest in various topics and potentially use it as way to tailor future DSM programs.

Budget

The approved annual budget and actual program costs from January 1, 2008 through June 30, 2008 are shown below in Table 13.

Table 13 Technology Information Center Program Costs			
Description	Annual Budget	Actual Program Costs	(Over)/Under
Implementation ¹	\$ 33,000		\$ 33,000
Administration	2,000	631	\$ 1,369
Total	\$ 35,000	\$ 631	\$ 34,369

¹ Payment made in December 2007 to provide monthly newsletters through September 2008. Another payment is expected to be made in Fall 2008.

Program Update

After the program received approval, Southwest took several steps to ensure its value as a DSM tool for its large Arizona customers. Informational meetings were held with Key Account Management employees to update them on the DSM aspects of the program, and reacquaint them with the wide variety of tools available through the newsletter service. Southwest also re-named the newsletter to *Energy Line* and created a calendar of articles that were designed to focus heavily on energy efficiency, conservation, and other related topics of interest to industrial customers. Please see Appendix E for samples of *Energy Line*.

In conjunction with the newsletter company, Questline, Southwest developed an online survey for readers of *Energy Line*. The survey was approved by Commission Staff, as required in the Commission's decision, and implemented in February 2008. After the completion of the survey, Southwest Key Account Management followed up with the customers requesting free energy consultations. Fifteen customers requested consultations within six months or less. These consultations provided Southwest with the opportunity to discuss these customers' energy needs and offer advice on improving their energy performance.

Survey Summary

In early 2008, surveys were e-mailed twice to a total of 120 Arizona recipients, with a total of 20 completed surveys returned within two weeks. One hundred percent (100%) of respondents find the Energy Line "somewhat" or "very valuable," and eighty-nine percent (89%) find the information "somewhat" or "very helpful" in making energy decisions, with eighty-three percent (83%) passing the information on to others involved in making energy decisions. Rate information and energy pricing forecasts received the highest interest ranking, with energy management and energy-saving technologies a close second. Approximately one-third (31%) have taken steps to improve energy-efficiency as a result of information provided in Energy Line. One hundred percent (100%) said they are planning to make energy-related changes in their business during the next two years. The greatest interest in energy-efficiency programs was for equipment replacement (18%) followed by peak shaving (17%) and combined heat and power (15%). Seventy-four percent (74%) indicated interest in an energy consultation from Southwest, with seventy-three percent (73%) wanting it within six months or less.

Energy Consultation Results

As of this Report, Southwest Key Account Management (KAM) engineers have provided 10 energy consultations. Two more are pending due to schedule conflicts and three prefer a consultation next year. Some consultations consisted of a phone conversation and a few included a site visit and discussion. The content of the consultations varied depending on the nature of the customer's business.

Two consultations so far have had a direct effect on customers' energy decisions: One is investigating new natural gas technologies such as the Electratherm which could potentially recover waste heat energy from their manufacturing process and convert it to usable electric power. Another has identified potential energy management opportunities such as waste heat recovery.

Southwest will continue to follow-up and work closely with these and all other customers who request consultations.

Future Developments

The survey results clearly demonstrate the value of Energy Line to Southwest's largest customers, and speak to the desirability of continuing the Technology Information Center program. As such, on August 1, 2008, Southwest filed with the Commission for continuation of the program. Should program continuation be approved, Southwest plans to conduct another reader survey, probably during the early part of 2009. During 2009, Southwest also plans to explore the possibility of expanding the program to include mid-to large-size commercial customers.

DISTRIBUTED GENERATION PROGRAM

On September 27, 2007, Southwest's Distributed Generation (DG) Program was approved in Decision No. 69917. Distributed Generation (DG) is defined as localized, on-site power generation, typically deployed through the use of modular technologies. The approved DG program encourages the installation of high-efficiency Combined Heat and Power (CHP) technologies. CHP describes any system that simultaneously or sequentially generates electric or mechanical energy and utilizes the thermal energy that is normally wasted. Most CHP systems are configured to generate electricity or mechanical power, recapture the waste heat, and use that heat for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying, or any other thermal need. Alternately, CHP may use excess heat from industrial processes and convert it into electricity. This program is intended for commercial and industrial customers utilizing general service or transportation tariffs, depending upon the potential application.

Budget

The annual approved budget and actual program costs from January 1, 2008 through June 30, 2008 are shown below in Table 14.

Table 14 Distributed Generation Program Program Costs			
Description	Annual Budget	Actual Program Costs	(Over)/Under
Implementation	\$ 22,000		\$ 22,000
Communication	\$ 8,000	\$ 1,732	\$ 6,268
Training & Education	\$ 10,000		\$ 10,000
Measurement & Evaluation	\$ 8,000		\$ 8,000
Administration	\$ 2,000		\$ 2,000
Incentives/Rebates	\$ 350,000		\$ 350,000
Total	\$ 400,000	\$ 1,732	\$ 398,268

Program Update

Southwest designed and printed program materials necessary for implementation, including a brochure, an application form, and a program agreement for successful applicants. The program is also promoted via Southwest's website, www.swgas.com, under the energy efficiency programs section. These items may be seen in Appendix F.

In addition, Southwest teamed with the Intermountain Combined Heat and Power Center (ICHPC) to conduct an informational breakfast meeting for potential CHP candidates on April 10, 2008. The agenda included an overview of CHP basics, information on the resources available from the ICHPC, a review of the Southwest DSM program, and a case history of a successful Arizona CHP project. Southwest created an invitation for the event, which can be seen in Appendix F.

Since that meeting, there have been inquiries from potential participants. One customer stated that a 10 percent incentive of \$350,000 was not adequate to spend approximately \$3,500,000 on one CHP-unit (3,000 kW). However, another customer, looking to convert waste material into energy, has completed a CHP Application with Southwest. At this time, that customer is looking into the installation of large natural gas-fired generation units at their site. Southwest is actively monitoring the progress of this application.

Future Developments

Another informational presentation is planned for November 12, 2008 at the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) luncheon, and potential candidates for CHP and other interested parties will be invited to attend.

Southwest Key Account Management engineers will continue to actively work closely with potential CHP candidates to encourage applications, and ultimately, installations.

DEMAND SIDE MANAGEMENT ADJUSTER MECHANISM

Southwest submits its Report on the DSM Adjuster Mechanism (DSMAM), in accordance with the Settlement Agreement approved by the Commission in Docket No. U-1551-96-596 (Decision No. 60352).

The DSMAM is designed to allow Southwest on-going recovery of its DSM program costs. A total of \$985,889, which includes interest, was collected through the DSMAM surcharge during the first half of 2008. Table 15 presents the costs and recoveries/interest collected by quarter, and the balance at the end of the year. Actual costs incurred (shown in previous cost tables by program) may vary from the costs recorded below for two reasons: (1) advances to program administrators; and (2) timing differences. Timing differences exist from the time work is completed, invoices are received, and invoices are paid/recorded

TABLE 15 Arizona DSM Adjuster Mechanism Actual Costs and Recoveries Booked by Quarter for 2008					
Description	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Total
Commercial Spray Valves					-
Commercial Equipment	29,827	9,350			39,177
Consumer Products Water Heaters	29,477	40,235			69,712
Distributed Generation	1,172	560			1,732
Energy Advantage Plus	42,683	64,324			107,007
Low-Income Energy Conservation	84,625	7,875			92,500
Low-Income Energy Conservation Bill Assistance	1,005	-			1,005
Technology Information Center		631			631
Total - Costs Booked 2008	188,789	122,975	-	-	311,764
Total - Recoveries & Interest 2008	(511,315)	(474,574)			(985,889)
Balance Carried Over from 2007					107,258
Balance DSM Deferral Account as of June 30, 2008					(566,867)

On January 31, 2008, Southwest made a tariff filing requesting a revised surcharge of \$0.00493 per therm, to become effective with the first billing cycle in April 2008. On February 7, 2008, the Staff recommended a rate of \$0.00424 per therm, based on anticipated reduced spending for DSM programs in 2008 of \$2.91 million rather than \$3.36 million as originally filed, to be applicable to all full margin customer classes. The new Staff-recommended rate was approved by the Commission on March 11, 2008, and became effective with the first billing cycle in April 2008.